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DEPARTMENT OF THE INTERIOR

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**APPLICATION SYSTEMS
LIFE CYCLE MANAGEMENT
DEPARTMENTAL MANUAL
HANDBOOK
(376 DM 10)**

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DEPARTMENTAL MANUAL
APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT HANDBOOK
(376 DM 10)

Application Systems Life Cycle Management

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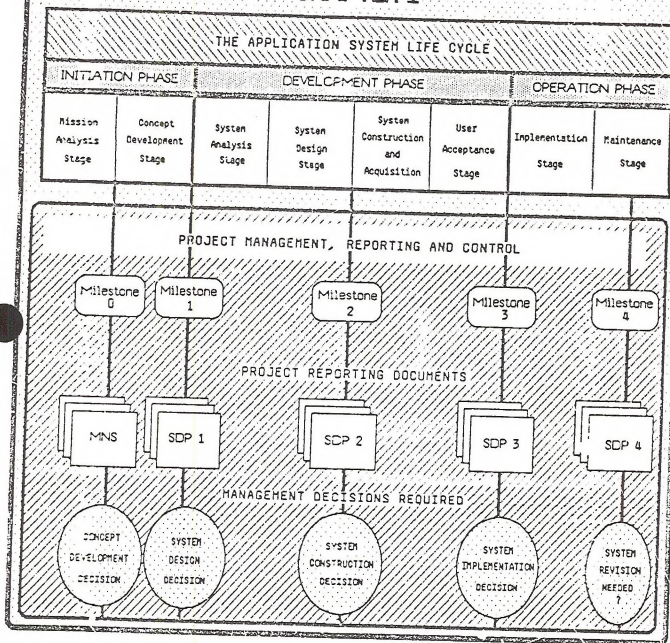
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MAJOR APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT CHAPTER 1



MNS = Mission Need Statement

SDP = System Decision Paper

Exhibit 1-1

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Chapter 1 Application Systems Life Cycle Management

1.1

1.1 Purpose. This Application Systems Life Cycle Management Handbook describes the Department's management process for the design, development, implementation, and operation of new major application systems.

1.2 Objectives. This handbook has six objectives.

- A. Establish a framework for managing the life of major application systems.
- B. Establish control mechanisms to ensure that application systems are developed, acquired, evaluated, and operated in an effective manner and at the lowest total overall costs.
- C. Ensure that an application system (AS) is responsive to user needs by requiring user participation in and approval of all phases of the life cycle.
- D. Identify individual roles and responsibilities throughout the life cycle and ensure management accountability for the success or failure of application system actions.
- E. Provide visibility of all resource requirements related to an application system for its entire life cycle.
- F. Avoid the development of unneeded systems by ensuring mission analysis is done before a major ADP development project is authorized.

1.3 Applicability. The standards set out in this handbook apply to all major application systems development, acquisition and major enhancements in the Department of the Interior. These standards are not intended to be applied retroactively to applications already under development. A major application system can be identified by answering the following questions in a yes-or-no manner with regard to the application system project that is being considered:

- A. Does the proposed system directly affect the Department's ability to meet a critical Departmental, national or international mission?
- B. Will the total cost of identifying requirements and developing the application software required to bring the system into operation equal or exceed \$1 million?

The cost thresholds detailed in this paragraph assume that all relevant costs of defining mission needs, and developing or acquiring the application software have been included. Relevant costs include direct and allocated costs for hardware, software, labor (in-house or contract), and charges for

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computer processing time during initiation and development. The costs incurred to operate a system, for example new hardware or a new data base management system, will be allocated to system life cycle costs (see C) and not allocated as development costs.

C. Will total life cycle costs, including the cost of operating the system exceed \$10 million? Will the annual cost of operating and maintaining the system exceed \$500,000?

D. Will the system affect national security?

E. Will the system directly affect the security and safety of substantial financial resources, people, or other valuable assets?

F. Does the system support a major mission whose function is multi-bureau in its scope as is, for instance, the PAY/PPRS system?

G. Does the system directly affect the ability of the Department to perform a mission designated by the President, Congress, Office of Management and Budget, or the Secretary as being of particular importance?

If the answer to any of these questions is "yes", then the application system is major and the standards in this handbook apply.

1.4 Responsibility

A. Assistant Secretaries. Each Assistant Secretary is responsible for:

(1) Ensuring that the LCM concept and requirements described in this Application Systems Life Cycle Management Handbook, are applied to all major ADP information system projects.

(2) Ensuring that major ADP information system projects and their goals and priorities are clearly defined in the Department's ADP and Telecommunications Five Year Acquisition Plan, as described in 306 DM 4.

B. Heads of Bureaus. Heads of bureaus are responsible for:

(1) Ensuring that the LCM process is applied to all major ADP system projects within their respective bureaus.

(2) Designating officials within user organizations to be responsible for management and control of specific major ADP information system projects.

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(3) Applying the LCM process to all ADP system projects to be maximum extent practical.

C. Program and Administrative Managers. Program and administrative managers who request the development of ADP information systems are responsible for:

(1) Ensuring that major information system projects they request are included in the Department's ADP and Telecommunications Five Year Acquisition Plan.

(2) Ensuring that the LCM concepts and requirements described in this handbook are applied to major ADP information system projects they request.

1.5. Importance of Documentation. Complete, accurate and usable documentation of the application systems covered by this handbook is essential. Historically, ADP professionals have considered requirements, computer program and data documentation to be by-products of the development process. Because this handbook applies to major, critically important, application systems, documentation of these systems requirements, computer programs and data are important deliverables of the development process. No major application system will be implemented without this documentation. The documentation will be used for system maintenance, impact of change analysis, management review and control, system conversion, and audits.

1.6 Application Systems Life Cycle Management.

A. Definition. Application Systems Life Cycle Management is the process of administering an application system over its entire life cycle. The life cycle itself is the time span between the establishment of a need for a system and the end of its operational use. The life cycle is divided into discrete, or separate, phases with formal milestones established as points for management control.

B. Handbook Structure. This handbook has four chapters.

(1) You are currently reading Chapter 1. It provides an overview of Application Systems Life Cycle Management, and includes definitions and management responsibilities.

(2) Chapter 2 contains a description of the life cycle of major application systems, and the activities to be performed during each stage of the life cycle.

(3) Standards for Project Management, Reporting and Control are described in Chapter 3.

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(4) Chapter 4 lists the minimum deliverable documents that the Department requires during the life cycle of a major application system. Details concerning the management of major application systems in the Department of the Interior are given in a technical document entitled, "A Project Manager's Guide to Application Systems Life Cycle Management." To obtain a copy of this document, contact the Director, Office of Information Resources Management.

1.7 Definitions of Terms. This section contains definitions of terms and acronyms used to describe Application Systems Life Cycle Management.
ADPE. Automatic Data Processing Equipment.

ADP Information System. An organized combination of human resources, ADP equipment, software, and established methods and procedures designed to collect, process and/or communicate data or information for the purposes of supporting management, administration, or other organization mission or program requirements.

ADP Information System Application. See application system.

Application System. An information system composed of one or more units of software supported by ADPE and automating work methods and procedures to collect, store, process and disseminate information to support specific agency missions.

Application Systems Life Cycle. The time span between the establishment of a need for a system and the end of its operational use. Overall, the system life cycle is divided into a number of discrete phases with formal milestones placed between and during each phase.

AS. Application System.

ASIC. Application System Life Cycle.

Automated Data Processing Equipment. Equipment used to execute computer program instructions, provide input to those instructions, or carry output from them. Included would be computer processing devices, data storage devices, data terminals, data communications equipment, and printing devices.

Concept Development Stage. The second stage in the life cycle of a major application system. In this stage blueprints (plans) are developed for the functions, data and data communications needed to fulfill the mission needs. These blueprints provide guidance and structure to the work done when the system enters the Development Phase.

Custodian. A person who guards, protects, operates and maintains an

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application system in accordance with a service level agreement with the steward of the application system. The custodian of an application system is the ADP manager with line responsibility for providing timely and cost-effective computing resources and system maintenance services. People who perform maintenance programming are carrying-out custodial functions.

Development Phase. The second phase in the life cycle of major information systems, and major application systems. Development Phase includes the specification of functional and data requirements, construction and acquisition of required software and hardware, and testing for technical and user acceptability of the new system.

Implementation Stage. The first stage in the Operation Phase of a system. During Implementation Stage the application system is turned over to the system maintenance staff (custodians) by the ADP development team, and operation begins.

Information Technology. Such technical resources as hardware and software, telecommunications, micrographics, reprographics, office information systems equipment, and other automation used to address problems in information handling, use, processing, storage, and management.

Initiation Phase. The first phase in the life cycle of a major information system. When an application system is being described this phase results in the mission need being described and analyzed. Then, a blueprint is developed for the development or acquisition of software to meet the mission need.

Interoperability. A state where two application programs can use common communications media to exchange information easily and precisely without apparent regard to configuration or equipment manufacturer.

Life Cycle Management. The process for administering an ADP Information System from the identification of a need through its replacement or termination. This process emphasizes strengthening early decisions which shape its costs and utility.

Maintenance Stage. The second stage in the Operation and Maintenance Phase of a system's life cycle. During this stage the application's operational effectiveness is maintained by maintenance staff (custodians). Requirements for system modifications are forwarded from the responsible functional area (stewards).

Major ADP Information System. An automated system that requires special, continuing management attention because of its extreme importance to an agency mission; its high development, operation or maintenance costs; or its significant impact on administration of agency programs, finances, property,

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or other resources.

Major Application System. An application system which, because of its importance to the Department requires special, on-going management attention. This importance is a result of the scope or importance of the missions being supported, the impact of the system on the financial, property or personnel resources of the Department, or the cost of the system.

Milestone 0. The first point in time during the life of an application system project that reporting is required to implement management control of the project. This milestone occurs after the activities of Mission Analysis Stage are complete, and before Concept Development Stage begins. If the project manager recommends proceeding to the next stage of the project, the project management committee decides whether or not to authorize the Concept Development Stage.

Milestone 1. The second point in time during the life of an application system project that reporting is required to implement management control of the project. This milestone occurs after the activities of Concept Development Stage are complete, and before Development Phase begins. If the project manager recommends proceeding to the next phase of the project, the project management committee decides whether or not to authorize the development of the proposed system, and the Assistant Secretary reviews the recommendation before system development begins.

Milestone 2. The third point in time during the life of an application system project that reporting is required to implement management control of the project. This milestone occurs after the activities of System Design Stage are complete, and before System Construction and Acquisition Stage begins. If the project manager recommends proceeding to the next stage of the project, the project management committee decides whether or not to authorize the acquisition and/or construction of the system that has been designed.

Milestone 3. The fourth point in time during the life of an application system project that reporting is required to implement management control of the project. This milestone occurs after the activities of User Acceptance Stage are complete, and before Implementation Stage begins. If the project manager recommends implementation of the system, the project management committee decides whether or not to authorize the implementation.

Milestone 4. The fifth point in time during the life of an application system project that reporting is required to implement management control of the project. This milestone occurs after the system is in operation. The responsible functional manager recommends whether or not changes need to be made to the application system now in operation, and presents a report

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reviewing the degree to which the operational system meets the goals outlined in the Initiation Phase. If revisions are recommended, the project management committee will decide whether or not to authorize their implementation.

Mission Analysis Stage. The first stage in the life cycle of a major application system. Mission Analysis Stage includes the description of mission needs for information and information processing.

MNS. Pronounced "mens". The Mission Need Statement document is prepared by the application planning team during the Mission Analysis Stage. It contains information describing the need for additional information and information processing in the workplace.

Operation and Maintenance Phase. The third phase in the life cycle of major information systems, and major application systems. This phase begins with the implementation of the system and continues as the system is operated to support the mission needs outlined in the Initiation Phase.

Phase. A distinct interval in the life cycle of an ADP information system, characterized by the type of activity performed and the specific end products produced.

Project. A planned undertaking that includes a number of activities to solve problems and produce results for an organization.

Project Charter. A written understanding between the Project Manager and the Project Management Committee. This charter is developed specifically for each major application system project. It sets forth the scope, objectives, activities, team organization, responsibilities, and the general methods of operation. The lines of authority and accountability are clearly identified.

Project Manager. Individual responsible for coordinating all functions of project management and held accountable for project performance.

Project Management Committee. Selected individuals having functional, financial, and technical expertise who oversee the status and progress of AS projects, and approve expenditures of funds. They also oversee planning and management of AS project resources, and provide reports to the IRMRC as required.

Project Team. Individuals assigned responsibilities for performing the activities and producing the products required during an application system development project. Major application systems will have two distinct Project Teams; one during the Initiation Phase, and a second team during the Development Phase.

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SDP 1. System Decision Paper 1 contains an overview of the application plan. It is prepared by the application planning team at the end of the Initiation Phase to support a go/no go decision regarding starting the Development Phase.

SDP 2. System Decision Paper 2 contains an overview of the detailed design of the proposed application system. Hardware, software, and communications options are discussed and an approach is recommended. This document is prepared by the ADP development team at the end of the System Design Stage to support a decision on whether to construct the proposed system.

SDP 3. System Decision Paper 3 contains a summary of the constructed application system and plans for implementing the system. It is prepared by the ADP development team at the end of the User Acceptance Stage to support a go/no go decision regarding system implementation.

SDP 4. System Decision Paper 4 contains an overview of the effectiveness of the application system that is in operation. It is prepared during the Maintenance Stage by the functional manager with responsibility for the mission area being served by the application system. The document supports a decision regarding whether or not additional investment is needed to bring the system into conformance with its planned goals.

Stage. A specific part of a phase in the life cycle of a major application system. Each stage exists to provide specific deliverables in the life of the system.

Steward. One who oversees the adequacy of an application system's support of workplace functions. The steward's role includes management accountability for the system's cost justification, the prioritizing of requests for its alteration, and assisting the custodian in establishing a scheduled date to implement a system change requested by the steward. Good management practice dictates that the steward of a system never be its custodian, if the system is a major application system. Professional ADP staff should perform custodial functions for major systems.

System Analysis Stage. This stage of an application system's life cycle is the first stage of the Development Phase. Detailed functional and data requirements are described and documented. These requirements may be identified by formal, structured analysis techniques, or by prototyping techniques.

System Design Stage. The second stage of the Development Phase in the system life cycle. System Design Stage includes the detailed design of software and data bases to support the application.

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System Construction and Acquisition Stage. The third stage of the Development Phase of a system's life cycle. In this stage the application system is actually constructed. Programming occurs, and proprietary application software packages (if required) are modified to meet functional and data requirements.

User Acceptance Stage. The final stage in a system's Development Phase. A full system test of the application is completed to determine if the system's functioning and data are acceptable to the system's users. If the system is acceptable to the user, a recommendation for implementation of the system follows.

User Acceptor. An individual appointed at the time a system development effort is initiated. The individual is to monitor and coordinate, from the user perspective, those system development projects in a user area. The User Acceptor should be considered for the role of Project Manager during the application planning team's tenure. The User Acceptor interacts with the Project Manager in a "customer-contractor" relationship during the ADP project team's tenure.

THE APPLICATION SYSTEM LIFE CYCLE

CHAPTER 2

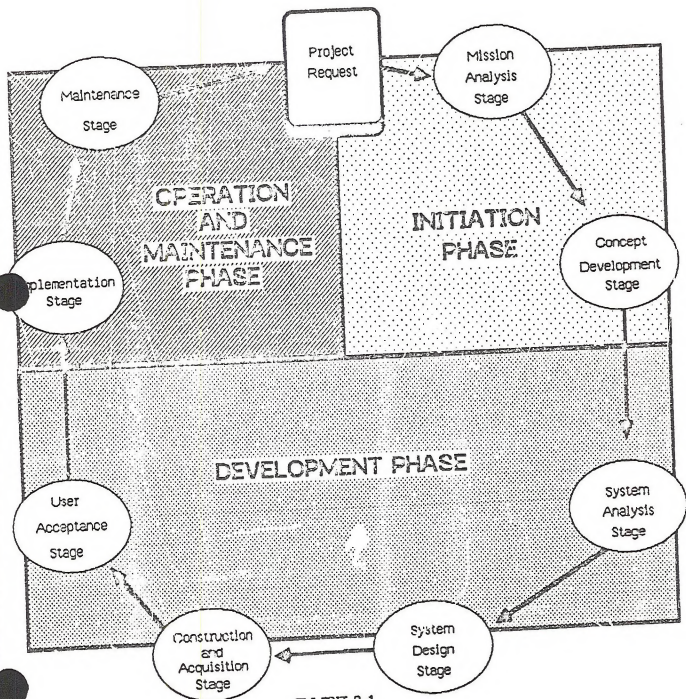


EXHIBIT 2-1

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Chapter 2 The Application System Life Cycle

2.1

2.1. Purpose. The Application System Life Cycle (ASLC) identifies the phases in the life of an application system (see Exhibit 2-1) and describes work done in the phases.

2.2 Objectives of ASLC.

- A. Establish a framework for managing the life of major applications systems;
- B. Provide guidelines for the activities during a system's life;
- C. Identify minimum applications systems documentation requirements;
- D. Establish products that can be checked during the life cycle; and
- E. Define system development responsibilities.

2.3 Background.

A. The Need for Standards. Information systems managers generally admit that system development projects often are not completed on time, do not meet user requirements and are not completed within budget. Most failures are the result of not understanding that building major systems requires a consistent management approach for structuring and controlling the process. The Application Systems Life Cycle Management Handbook is such a standard.

B. ASLC as the Solution. The ASLC is the set of standards for initiating, designing, installing, and maintaining applications systems. It provides a common framework for managing the system development and maintenance process in order to improve communications among diverse interest groups, facilitate control of the process, and specify the contents of deliverables. The ASLC addresses all types of major application systems development work.

2.4 Responsibilities.

A. Offices and bureaus will manage all major application systems during the Development Phase, and provide maintenance expertise in the Operation Phase.

B. Functional program and administrative management must administer major applications during the Initiation Phase, and retain management oversight responsibilities during the Development and Operation Phase.

C. A Project Management Committee provides executive management throughout a major application's life cycle.

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D. The Office of Information Resources Management prepares standards for major application systems management.

2.5 Project Request. The ASLC begins when someone identifies that a deficiency exists which inhibits an Interior agency from effectively and efficiently meeting its mission. Anyone can initiate an ASLC by notifying a responsible functional (programmatic or administrative) manager, and the process of initiating a project begins with the preparation of a project request.

2.6 ASLC Phases. There are three life cycle phases in the ASLC.

A. Initiation Phase

(1) Purpose. In this phase the mission need is analyzed to ensure that a system is needed, and to provide clear direction for later phases. A blueprint for the application is constructed.

(2) Description. Develop an idea for a potential application system. State mission tasks and identify deficiencies. Perform a mission analysis to determine the required functions and data, and to obtain enough data to decide if the automation idea should be pursued into the Development Phase. Outline the application concept, and provide cost and benefit estimates. Management participation in the Initiation Phase is very high, since determining if there is a need that justifies a system is a management question. The Assistant Secretary's approval of the recommended concept is required before the Development Phase begins.

(3) Stages. There are two stages in this phase.

- o Mission Analysis
- o Concept Development

B. Development Phase.

(1) Purpose. In this phase the application system is constructed, tested, and documented. Detailed requirements definition occurs early in this phase.

(2) Description. Define the functional requirements in enough detail to determine system and software specifications. Then, identify the data requirements, establish performance criteria and determine interfaces to other systems. Follow the National Archives and Records Administration standards for records creation, documentation and disposal.

Working with in-house or contract staff create a definitive design proposal for development, or a prototype for experimentation. Also, prepare a detailed cost/benefit analysis for the new design. During system

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2.6A

construction acquire and install the hardware, data communications and proprietary software needed. The application software is developed and undergoes unit and technical testing before system acceptance testing takes place.

System (user acceptance) test is performed to determine if the system's functionality and data are acceptable to the user. The users of each type of documentation will sign-off on the documentation when they find the documentation prepared by the project team is adequate. The project team corrects any deficiencies found in the documentation. User training material is finalized, and operation instructions are prepared.

(3) Stages. Development Phase has four stages.

- o System Analysis (prototyping may be substituted)
- o System Design
- o Construction and Acquisition
- o User Acceptance

C. Operation and Maintenance Phase.

(1) Purpose. In this phase the system is brought into operation to fulfill the requirements for which it was constructed.

(2) Description. Operate the system to accomplish the production objectives for which it was designed. Run, change, or repair the system as necessary. Prepare resource utilization and efficiency reports and conduct periodic post implementation reviews to ensure that the system still efficiently meets requirements.

(3) Stages. Operation and Maintenance Phase has two stages.

- o Implementation
- o Maintenance

2.7 Use of Standards. Use this Application Systems Life Cycle Management Handbook when developing major applications systems in addition to the Federal Information Processing Standards (FIPS PUB) Guidelines, numbers 38 and 64. ADP audits are to be conducted to ensure compliance.

2.9 Document Retention. The Project Manager retains all documentation required as a part of ASLC in a Project File. A copy of these documents is turned-over to the functional manager (steward) who is accountable for the application system. The documents are important records, and will be archived after an application system is discarded or replaced.

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Data in systems containing records created and maintained in electronic and magnetic media will be retrievable, protected from unauthorized disclosure, and disposed of only in compliance with approved records disposal schedules. See 44 U.S.C. Chapter 33.

PROJECT MANAGEMENT, REPORTING AND CONTROL

CHAPTER 3

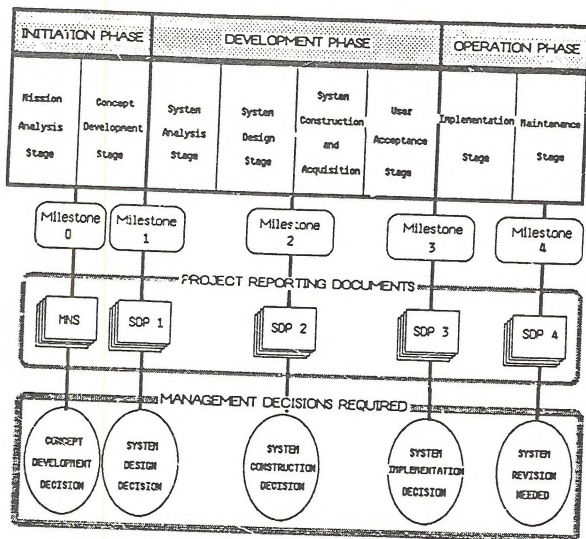


EXHIBIT 3-1



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3.1

Chapter 3. Project Management, Reporting and Control.

3.1 Purpose. This chapter establishes minimum standards for project management and reporting when a major application system is being developed. These standards only apply to application systems that are deemed to be "major" under the guidelines of this handbook. See 306 DM 3 or bureau standards for project management standards applicable to systems not covered by this directive.

3.2 Objectives.

A. Ensure the projects for developing major application systems have standards that recognize the unique characteristics of major systems;

B. Coordinate project management with the Application System Life Cycle (Chapter 2); and

C. Ensure adequate management control and review mechanisms exist when major application systems are developed, so that system costs and benefits are thoroughly documented and reviewed by management.

3.3 Applicability. This standard applies to all work which leads to the implementation of a major application system as defined in paragraph 1.3 of this handbook.

3.4 Components. The three major components of project management, reporting and control are the organization and management of the project, the management controls placed upon the project, and the reporting required to enforce the management controls.

A. Project organization and management will require that project teams be formed to perform the life cycle activities mentioned in Chapter 2 of this handbook. Because of the size and importance of major applications, two distinct project teams will be involved in a major application system's life cycle.

(1) Application Planning Team. This team will be formed to complete the activities listed as part of the Initiation Phase. Team members will be from the functional area sponsoring the automation project, since the work to be done in this phase focuses upon the functional area's work needs.

(2) APP Development Team. This team will build upon the work of the application planning team, and complete the activities that form the Development Phase. Someone experienced in project management should be Project Manager of this team.

B. Management controls include the handbook you are now reading, and the structures it mandates to provide management oversight of the application system as it progresses through its life cycle. There are two

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Chapter 3 Project Management, Reporting and Control

3.4B

bodies that directly review and exercise management oversight of the application development and acquisition process.

(1) Project Management Committee (PMC). The PMC will review the reports of the Project Manager at each milestone and make a go/no go decision with regard to the next stage of the life cycle. The PMC should require the Project Manager to report progress periodically between milestones.

(2) IMRC. This Departmental executive committee has been convened by the Under Secretary. Composed of the Under Secretary and representatives of the bureaus, this group reviews the progress of major application system projects. The Project Manager is responsible for meeting the reporting required by the IMRC.

C. Major application system projects will report their progress at predetermined milestones in the life cycle. Management's explicit approval is needed at each milestone before the project can proceed beyond that milestone. Rigorous enforcement of these reporting requirements by management authorities will mitigate the chances of a major application system failure late in the system life cycle. This will allow applications that are "off-track" to be corrected before they become major problems. Reporting is required to the Project Management Committee at each of the following milestones.

(1) Milestone 0. Milestone 0 occurs after the Mission Analysis Stage and prior to the Concept Development Stage during the Initiation Phase. The Application Planning Team is responsible for meeting these reporting requirements.

(2) Milestone 1. Milestone 1 occurs after the Concept Development Stage and prior to the System Analysis Stage. The Application Planning Team is responsible for meeting these reporting requirements.

(3) Milestone 2. Milestone 2 occurs after the System Design Stage and before the System Construction and Acquisition Stage. The ADP project team is responsible for meeting these reporting requirements.

(4) Milestone 3. Milestone 3 occurs after the Development Phase and prior to placing the AS in operation. The ADP project team is responsible for meeting these reporting requirements.

(5) Milestone 4. Milestone 4 occurs after the AS has been put in operation. The functional manager is responsible for meeting these reporting requirements.

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Chapter 3 Project Management, Reporting and Control

3.5

3.5 Details. Detailed information regarding Project Management, Reporting and Control can be obtained by contacting the Office of Information Resources Management and requesting a copy of "A Project Manager's Guide to Application Systems Life Cycle Management."

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT DOCUMENTS

CHAPTER 4

INITIATION PHASE		DEVELOPMENT PHASE				OPERATION PHASE	
Mission Analysis Stage	Concept Development Stage	System Analysis Stage	System Design Stage	System Construction and Acquisition	User Acceptance Stage	Implementation Stage	Maintenance Stage
LIFE CYCLE MANAGEMENT DOCUMENTS							
PROJECT REQUEST	SYSTEM OBJECTIVES	CURRENT SYSTEM DESCRIPTION	SYSTEM DESIGN PROPOSAL	ADPE SPECS	SYSTEM * ACCEPTANCE REPORT	APPLICATION STEWARDSHIP DOCUMENT	POST IMPLEMENTATION REVIEW REPORT
MISSION ANALYSIS METHOD	SYSTEM ARCHITECTURE						
COST/BENEFIT	DATA ARCHITECTURE	DETAILED FUNCTIONAL REQUIREMENTS	DETAILED COST/BENEFIT REVISIONS	APPLICATION SOFTWARE DOCUMENTATION	CONVERSION PLAN	USER TRAINING PLAN	SYSTEM DECISION PAPER 4
PROJECT CHARTER	DATACOM ARCHITECTURE						
ORGANIZATION MODEL	SYSTEM LIFE CYCLE STRATEGY	DATA REQUIREMENTS	REVISED SLC STRATEGY	SYSTEM TEST PLAN	PIR PLAN	DATA PROCESSING MANUAL	OPERATIONS MANUAL
PROCESS MODEL	STONE MILESTONE DATES						
INFORMATION MODEL	SLC RESOURCE ESTIMATES	SYSTEM DECISION PAPER 2	CONTROL, BACKUP, & SECURITY SUMMARY	USER MANUAL	SYSTEM DECISION PAPER 3	SYSTEM DECISION PAPER 4	SYSTEM DECISION PAPER 4
MISSION NEED STATEMENT	COST/BENEFIT						
	SYSTEM DECISION PAPER 1						

* SYSTEM ACCEPTANCE REFERS TO FUNCTIONALITY AND DATA ACCEPTABILITY, NOT SYSTEM STEWARDSHIP.

EXHIBIT 4-1

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Chapter 4 Application Systems Life Cycle Management Documents

4.1

4.1 Purpose. This chapter lists the documents required during the life cycle of a major application system. The documents are presented chronologically. While additional documents will, in all likelihood, be required by individual projects, this chapter lists the minimum documents required for project documentation, reporting and control. Please note that all documents marked with an asterisk (*) need not be prepared exactly as outlined. Project managers should be prepared to justify why a particular document was not produced, as will be the case, for example, if a prototyping methodology is used to replace the System Analysis Stage. The substance required by these documents will be required, but variations will be approved on a case-by-case basis. Documents not marked with an asterisk will be required for all projects.

4.2 Initiation Phase Documents.

- Project Request
- Mission Analysis Methodology
- Cost/Benefit Analysis
- Project Charter
- Organization Model
- Mission Process Model
- Information Model
- Mission Need Statement
- * System Objectives
- * System Architecture
- * Data Architecture
- * Data Communications Architecture
- System Life Cycle Strategy
- System Milestone Dates
- System Life Cycle Resources Estimates
- Revised Cost/Benefit Analysis
- Revised Mission Need Statement
- System Decision Paper 1

4.3 Development Phase Documents.

- * Current System Description
- * Detailed Functional Requirements
- * Data Requirements
- Design Proposal
- Detailed Cost/Benefits Analysis
- Revised Life Cycle Strategy
- System Decision Paper 2
- * ADPP Specifications
- * Application Software Documentation
- System Test Plan
- System Acceptance Report
- Implementation Plan

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4.3

- * Conversion Plan
- * User Training Plan
- Post Implementation Review Plan
- * Data Processing Manual
- * User Manual
- Control, Backup and Security Summary
- * Operations Manual
- System Decision Paper 3

4.4 Operation and Maintenance Phase Documents.

Application Stewardship Document
Post Implementation Review Report
System Decision Paper 4

- 4.5 Details. Detailed descriptions of the contents of each document can be obtained by contacting the Office of Information Resources Management and requesting a copy of "A Project Manager's Guide to Application Systems Life Cycle Management."